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10/564,696	07/10/2006	Stephen William Murray	7101P010	2231

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EXAMINER

DAGER, JONATHAN M

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3663

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,696	Applicant(s) MURRAY, STEPHEN WILLIAM	
	Examiner JONATHAN M. DAGER	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11 August 2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 5-6 filed 11 August 2009, with respect to the rejection of claims 1-4 and 7-10 under 35 U.S.C. 101 have been fully considered and are persuasive.

Therefore, the rejection of claims 1-4 and 7-10 under 35 U.S.C. 101 has been withdrawn.

2. Applicant's arguments, see page 6 filed 11 August 2009, with respect to the rejection of claim 4 under 35 U.S.C. 112, 1st paragraph, have been fully considered and are persuasive.

Therefore, the rejection of claim 4 under 35 U.S.C. 112, 1st paragraph has been withdrawn.

3. Applicant's arguments, see page 6 filed 11 August 2009, with respect to the rejection of claim 7 under 35 U.S.C. 112, 1st paragraph, have been fully considered and are persuasive.

Therefore, the rejection of claim 4 under 35 U.S.C. 112, 1st paragraph has been withdrawn.

4. Applicant's arguments, see pages 6-7 filed 11 August 2009, with respect to the rejections of claims 1 and 8 under 35 U.S.C. 112, 2nd paragraph have been fully considered and are persuasive due to amendments. Therefore, the rejection of claims 1 and 8, and any claim dependent therefrom under 35 U.S.C. 112, 2nd paragraph has been withdrawn.

5. Applicant's arguments, see pages 7-8 filed 11 August 2009, with respect to the rejections of claims 5 and 7 under 35 U.S.C. 112, 2nd paragraph have been fully considered and are

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persuasive due to amendments. Therefore, the rejection of claims 5 and 7, and any claim dependent therefrom under 35 U.S.C. 112, 2nd paragraph, has been withdrawn.

6. Applicant's arguments, see page 8 filed 11 August 2009, with respect to the rejections of claims 1 and 8 under 35 U.S.C. 102(b) have been fully considered and are persuasive due to amendments. Therefore, the rejection of claims 1 and 8 under 35 U.S.C. 102(b) has been withdrawn.

Subsequently, the prior art rejections of all claims dependent therefrom are withdrawn.

However, upon further consideration, new grounds of rejection are warranted (see below).

Remarks

7. Claims 1 and 4-7, as currently listed, are drawn toward a method of determining acceleration. However, there is no recitation of any kind of structural or processing elements in the claimed embodiments that are necessary to manipulate the data to arrive at the desired outcome. As such, the embodiments of claims 1 and 4-7 can be carried out manually by the user using any kind of manual/mental processes they see fit to adequately arrive at the claimed results.

Claims not limited toward using a machine to carry out a process can be anticipated by augmenting structure with mental processes (See MPEP 2111 [R-5]).

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1, 4, 5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckmann (US 6,349,255) in view of Hessmert (WO 02/053430) (using US 2003/0141128 as a translation).

Regarding claims 1, 4, and 8, Heckmann discloses that an acceleration sensor 11 installed in the vehicle measures longitudinal acceleration $a_{_Sen}$ of the vehicle. The (wheel circumference) acceleration $a_{_Rad}$ of the vehicle wheels is calculated from the wheel rotation speed signals by differentiation over time (output signal of block 10). Signal $a_{_Sen}$ of acceleration sensor 11 is filtered in a high-pass filter 13 with time constant T, to yield high-pass-filtered signal $HP(a_{_Sen})$ (column 2 lines 28-36).

Thus, it is disclosed obtaining by measurement a first signal representing vehicle speed, differentiating the first signal with respect to time, and low pass filtering the first signal to provide a first filtered acceleration signal. It is further noted that in the originally filed specification, it is provided that “It is of course known to measure vehicle acceleration by means e.g. of some form of accelerometer, or alternatively by measuring the speed of the vehicle wheels and differentiating with respect to time.” See specification filed 10 January 2006, page 1, 2nd paragraph.

Further, the above provides for obtaining a second filtered acceleration by high pass filtering a sensed vehicle acceleration.

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Heckmann discloses that the signals filtered in this fashion are added at node 14 to yield variable a_uGr, which represents the vehicle's acceleration relative to the road surface, i.e. the ground acceleration (column 2 lines 41-44).

Thus, it is disclosed a method of determining the acceleration of a motor vehicle via adding the first and second filtered acceleration signals to obtain an output signal representing vehicle acceleration.

Heckmann does not explicitly disclose calculating the estimated vehicle acceleration from the net driving force.

Hessmert teaches that the theoretical longitudinal acceleration can be determined in follows in step b:

$$ax_model = \frac{MA - SumMBrake - MJ_SUM - MWL}{R * m},$$

-where MA denotes the drive torque, SumMBrake denotes the sum of the wheel braking torques, MJ_SUM denotes the sum of the moments of inertia of the wheels, MWL denotes the air resistance moment, R denotes the rolling radius of the wheels, i.e., tires, and m denotes the mass. This makes it possible, for example, to switch to the theoretical longitudinal acceleration when all the wheels are spinning, so that a much more accurate reference speed may be determined in comparison with the related art (para 0024-0025).

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Thus, Hessmert teaches calculating an estimated vehicle acceleration as a function of the net driving force. Further, the above explicitly teaches determining the net driving force via subtracting braking forces from the driving forces on the wheels.

Heckmann has disclosed a base invention which is capable of all functions of the claimed embodiments, including filtering received signals, then ultimately summing them to provide for an output signal representing vehicle acceleration. Where Heckmann is deficient, with respect to claim 1, is that Heckmann does not explicitly disclose determining an estimate of vehicle acceleration from the net driving force. Hessmert cures the deficiency in a similar invention for determining the dynamic situation of a vehicle, and further adds the processing means (see fig. 1, 4 item 10) configured for receiving signals and calculating the estimated vehicle acceleration.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of estimating the vehicle acceleration via net driving force input.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Regarding claim 5, the combination of Heckmann and Hessmart teaches that an adaptive model can be used to estimate vehicle acceleration (see Hessmart, para 0024).

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Heckmann and Hessmart, as applied to claims 1 and 5 above, and further in view of Franca-Neto (US 2004-0166824).

Regarding claims 6 and 7, the combination of Heckmann and Hessmart suggests, but does not explicitly disclose wherein the net driving force is filtered before being supplied to the adaptive model, or how the filtering is accomplished.

Franco-Neto teaches that instead of using a high pass filter to remove the DC component of the baseband signal, the system uses a low pass filter to isolate the DC component of the signal which is then subtracted from the baseband signal itself. Because a low pass filter is significantly easier to implement using very large scale integration (VLSI) techniques than a high pass filter, the system is more integration friendly than past designs. In one embodiment of the invention, a balanced amplification system is provided that includes first and second matched amplifiers in a parallel arrangement. The first amplifier amplifies an input signal having a DC offset component and delivers the resulting signal to a pair of differential output lines. The second amplifier amplifies a low pass filtered version of the same input signal and delivers the result to the pair of differential output lines in an inverted manner. Thus, the low pass filtered signal combines with the unfiltered signal 180 degrees out of phase on the output lines, and is thus subtracted therefrom (para 0010).

Thus, in signal analysis it is known to accomplish high pass filtering via the combination of a low pass signal and the unfiltered signals.

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All inventions are drawn to signal comparison and filtering. All of the components and methods are known in the above prior art. The only difference is a combination of these elements into a single device.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Franca-Neto onto the invention of Heckmann and Hessmart, since both systems could be used in combination to produce the predictable result of processing the results of the sensed data to provide a filtered signal containing a very specific frequency band absent of unwanted noise.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(a).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD

01 December 2009

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663